

REMARKS

Applicant thanks the Examiner for the very thorough consideration given the present application.

Claims 1-10 and 23-27 are now present in this application. Claims 1, 7 and 23 are independent.

Amendments have been made to the specification, claims 11-22 have been canceled, claims 23-27 have been added and claims 1, 4 and 7 have been amended. Reconsideration of this application, as amended, is respectfully requested.

Priority Under 35 U.S.C. § 119

Applicant thanks the Examiner for acknowledging Applicant's claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

Objection to the Drawings

The Examiner has objected to the drawings, asserting that the feature "a first conducting line proximal to the reflecting layer, the first conducting line at least partially defining the light-transmitting region", as recited in claim 21 and "a second conducting line proximal to the reflecting layer, the second first

conducting line at least partially defining the light-transmitting region", as recited in claim 22 are not shown in the drawings.

Without conceding to the propriety of the Examiner's objection, Applicant respectfully submits that claims 21 and 22 have been canceled, thus rendering the Examiner's objection to the drawings moot. Reconsideration and withdrawal of this objection to the drawings are respectfully requested.

Rejections Under 35 U.S.C. § 102

Claims 1-3 and 5-22 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,295,109B1 to Kubo et al. (Kubo). This rejection is respectfully traversed.

Claim 1

With respect to claim 1, Kubo discloses a transmission and reflection type LCD device in a first embodiment (shown in FIG. 2), which includes a first substrate 1, a second substrate 2, a liquid crystal layer 5 interposed between the first and second substrates 1 and 2, a first polarizer 6 provided on a surface of the first substrate 1 opposite to the liquid crystal layer 5, and a second polarizer 9 provided on a surface of the second substrate 2 opposite to the liquid crystal layer 5. The transmission and reflection-type LCD device further includes a first phase compensation element 7 (typically, a $\lambda/4$ wave

plate) provided between the first polarizer 6 and the liquid crystal layer 5 and a second phase compensation element 10 (typically, a $\lambda/4$ wave plate) provided between the second polarizer 9 and the liquid crystal layer 5 (see Kubo, Col.10, lines 14-27).

The Applicant has designated the lower substrate 2 as the first transparent substrate, and it appears that the Examiner has also chosen substrate 2 of Kubo as the first transparent substrate. This is because the Examiner asserts that regions 3 and 8 define a reflective film on an inner side of the first transparent substrate, and therefore it follows (from the drawing) that the Examiner has chosen substrate 2 of Kubo as the first transparent substrate. While Kubo designates substrate 2 as a second substrate, for direct comparison with Applicant's invention, it is apparent that substrate 2 (as a first substrate) is more appropriate.

In Kubo the $\lambda/4$ wave plate 10 works in conjunction with the second polarizer 9 (a linear polarizer) to act as a circular polarizer. By contrast, Applicant claims a cholesteric liquid crystal polarizer (CLC polarizer), wherein light circularly polarized by selective reflection is transmitted to a liquid crystal layer without absorbing light from a backlight, thereby improving light use efficiency. The CLC polarizer is not taught by Kubo. Particularly, Kubo fails to disclose a cholesteric liquid crystal polarizer on an outer side of the first transparent substrate, as recited in independent claim 1, as amended.

Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claim 7

Kubo (Fig. 8B) discloses a transmissive electrode 31. Figure 8B is a cross-sectional view of the active matrix substrate taken along line 8D-8D' of Figure 8A (cited by the Examiner). An uncovered portion of transmissive electrode 31 is centrally disposed in (and bordered by) reflective pixel electrode 30 (see Figs. 8A and 8B). The Examiner describes the uncovered portion of transmissive electrode 31 as a light-transmitting region. Clearly, the uncovered portion 31 is not bordered by a gate line.

Since the exposed region 31 is bordered only by pixel electrode 30 (and not by a gate line), Kubo fails to disclose a light-transmitting region through which light may pass is bordered by a gate line, as recited in independent claim 7 (as amended). Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claim 11

Applicant respectfully submits that independent claim 11 has been canceled, thereby rendering its rejection under 35 U.S.C. § 102(e) moot.

Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claim 17

Applicant respectfully submits that independent claim 17 has been canceled, thereby rendering its rejection under 35 U.S.C. § 102(e) moot. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested. Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Claims 2-3, 5, 6, 8-10, 12-16 and 18-22

With regard to dependent claims 2-3, 5, 6, 8-10, 12-16 and 18-22, Applicant submits that claims 12-16 and 18-22 have been canceled, thereby rendering their rejection under 35 U.S.C. § 102(e) moot. Claims 2-3, 5-6 and 8-10 depend, either directly or indirectly, from independent claims 1 and 7, which are allowable for the reasons set forth above, and therefore claims 2-3, 5-6 and 8-10 are allowable based on their dependence from claims 1 and 7. Reconsideration and allowance thereof are respectfully requested.

Rejections Under 35 U.S.C. § 103

Claim 4 stands rejected under 35 U.S.C. 103(a) over Kubo, as applied to claim 1 above, in view of U.S. Patent No. 4,017,156 to Moriyama. This rejection is respectfully traversed.

Claim 4 depends on claim 1. Kubo, argued above with respect to independent claim 1, fails to disclose or suggest a cholesteric liquid crystal polarizer on an outer side of the first transparent substrate. Moriyama cannot fill this vacancy. Since neither Kubo, nor Moriyama discloses or suggests the above-recited features of independent claim 1, Kubo, in view of Moriyama cannot render claim 4 obvious to one of ordinary skill in the art.

Reconsideration and withdrawal of this art grounds of rejection are respectfully requested.

Added Claims

Claims 23-27 have been added for the Examiner's consideration.

Independent claim 23 recites a combination of elements in a transmission-reflection type liquid crystal display device, including the reflecting film is apart from any one of the gate and data lines to define a light-transmitting region therebetween and a reflecting region on the reflecting film. Applicant respectfully submits that this combination of elements as set forth in independent claim 23 is not disclosed or made obvious by the prior art of record, including Kubo.

Applicants submit that claims 24-27 depend, either directly or indirectly, from independent claim 23, and are therefore allowable based on their dependence from claim 23, which is believed to be allowable.

Consideration and allowance of claims 23-27 are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Percy L. Square, Registration No. 51,084, at (703) 205-8034, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

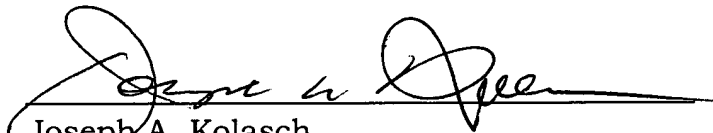
Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), the Applicant respectfully petitions for a two (2) month extension of time for filing a response in connection with the present application and the required fee of \$410.00 is attached herewith.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The paragraph beginning on page 9, line 20, has been amended as follows:

--By contrast, in the conventional reflection type liquid crystal display device shown in Fig. 5, the reflecting film 36 overlaps with the every inner edge of the gate line 25 and the data line 24, in order to form a storage capacitance. In the Fig. 5, elements having the same structure as elements shown in Fig. 4 are represented by the same reference numbers, and [furthr] ~~further~~ description thereof is omitted. In this conventional case, although not illustrated in the drawing, the gate line 25 and the data line 24 are insulated from each other by an insulating layer provided between the gate line and the data line. The data line 24 and the reflecting film 3 are insulated from each other by an insulating layer provided between the data line and the reflecting film.--

In the Claims:

Claims 11-22 have been canceled without prejudice or disclaimer of the subject matter contained therein.

The claims have been amended as follows:

2. (Amended) A transmission-reflection type liquid crystal display device, comprising:

- a first transparent substrate;
- a second transparent substrate;
- a liquid crystal layer between the first transparent substrate and the second transparent substrate;
- a linear polarizer on the second transparent substrate;

a [circular] cholesteric liquid crystal polarizer on an outer side of the first transparent substrate; and

a reflecting film on an inner side of the first transparent substrate adjacent to the liquid crystal layer, the reflecting film defining a light-transmitting region.

4. (Amended) The transmission-reflection type liquid crystal display device of claim 1, wherein the [circular] cholesteric liquid crystal polarizer includes a right handed helical cholesteric liquid crystal having a range of pitch values of $(380\text{nm}-800\text{nm})/n$, where n is an average index of refraction of the cholesteric liquid crystal.

7. (Amended) A [tansmission] transmission-reflection type liquid crystal display device, comprising:

a plurality of gate lines and data lines defining a plurality of pixels;

a transistor in each pixel, a gate of which is connected to a gate line and a second terminal of which is connected to a data line;

a reflecting film formed in each pixel and connected to a third terminal of the transistor in each pixel,

wherein a light-transmitting region through which light may pass [exists between the] is bordered by a gate line and [the] said reflecting film in each pixel.

Claims 23-27 have been added.